CLAIMS

We Claim:

Sub A' 1. A frequency converter for converting an intermediate-frequency television signal (s2) to a low frequency by means of a mixer (4) which is fed at its radio-frequency signal input (4.1) with the intermediate-frequency television signal (s2) via an intermediate-frequency filter (3) and at its local-oscillator-signal input (4.2) with a local-oscillator signal (u), the frequency of the local-oscillator signal (u) lying in the range of an adjacent picture carrier (NBT) which is defined by a channel spacing (k_0; k_0*) and a respective television standard, and which after the frequency conversion is suppressed as a converted adjacent picture carrier (NBT*), or at least attenuated to a negligible residual amplitude, by means of a high-pass selectivity skirt (HP) of a filter device (5).

2. The frequency converter of claim 1, wherein the frequency offset (df) of the local-oscillator signal (u)

A' cancel.

from the adjacent picture carrier (NBT) is less than the high-pass cutoff frequency (fg) of the filter device (5).

3. The frequency converter of claim 2, wherein the mixer (4) is fed at the local-oscillator-signal input (4.2) with a quantized local-oscillator signal (u), and that the harmonics produced by the mixer (4) are suppressed in the television signal (s4) by means of a low-pass selectivity skirt (TP1, TP2) of the filter device (5).

4. The frequency converter of claim 3, wherein the local-oscillator signal (u) is a square-wave signal, particularly a signal having the values +1 and -1.

5. The frequency converter of claim 1, wherein the local-oscillator-signal input (4.2) is fed from a digitally controlled oscillator (8) whose frequency is determined by control signals (po) from a control unit (9) according to the respective television standard or the respective channel spacing.

6. The frequency converter of claim 1, wherein after the filter device (5), the television signal (s5) is digitized for the further signal processing by means of an analog-to-digital converter (6).

Sub A2 (7). A frequency converter for converting an intermediate-frequency television signal (s2) to a low frequency comprising:

a mixer having first and second inputs and an output;

a first filter being coupled to said first input of said mixer and adapted to provide an intermediate-frequency television signal (s2) thereto;

an oscillator coupled to said second input of said mixer and adapted to provide an oscillator-signal (u) lying in a range of an adjacent picture carrier (NBT) which is defined by a channel spacing (k_0; k_0*) and a respective television standard; and,

a second filter coupled to said output of said mixer for attenuating said adjacent picture carrier to a negligible residual amplitude.

8. The frequency converter of claim 7, wherein a frequency offset (df) of the local-oscillator signal (u) from the adjacent picture carrier (NBT) is less than a high-pass cutoff frequency (fg) of the second filter.

9. The frequency converter of claim 8, wherein the mixer is fed at the second input with a quantized local-oscillator signal (u), and harmonics produced by the mixer are suppressed in a television signal by means of a low-pass selectivity skirt of the second filter.

10. The frequency converter of claim 9, wherein the local-oscillator signal (u) is a square-wave signal, having the values +1 and -1.

11. The frequency converter of claim 7, further comprising a control unit coupled to said oscillator, wherein the oscillator is digitally controlled by said control unit according to a respective television standard or respective channel spacing.

12. The frequency converter of claim 7, further

comprising digitizing means coupled to said second filter, said digitizing means for digitizing a television signal for further signal processing by means of an analog-to-digital converter.

13. A method for processing an intermediate-frequency television signal comprising the steps of:

filtering an intermediate-frequency signal with a first filter;

generating an oscillator signal (u);

mixing said filtered intermediate-frequency signal and said oscillator signal (u);

filtering said mixed signals using a second filter having a high-pass selectivity skirt located near the frequency origin and a low-pass characteristic for higher frequencies; and,

separating said high-pass selectivity skirt filtered signal into visual and audible components for reproduction.

14. The method of Claim 13, wherein said first filter comprises a surface-wave filter.

Sub A3
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15. The method of Claim 13, wherein a frequency offset (df) of the oscillator signal (u) from an adjacent picture carrier (NBT) is less than a high-pass cutoff frequency of the second filter.

16. The method of claim 15, wherein said oscillator signal (u) is quantized, and further comprising the step of suppressing harmonics produced by said mixing using a low-pass selectivity skirt of the second filter.

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17. The method of claim 16, wherein the oscillator signal u is a square-wave signal having values +1 and -1.

cl4

18. The method of claim 13, further comprising the step of digitizing said high-pass selectivity skirt filtered signal.

cl6

19. The method of Claim 13, further comprising controlling said oscillator signal (u) with a control device, wherein said oscillator signal (u) is digitally controlled according to a respective television standard

cl5 (2)

or respective channel spacing.

20. The method of Claim 13, further comprising the step of feeding said oscillator signal (u) from a digitally controlled oscillator whose frequency is determined by control signals (po) from a control unit according to a respective television standard or respective channel spacing.